

THURSDAY, MAY 26, 1910.

## THE LAST DAYS OF CHARLES II.

*The Last Days of Charles II.* By Dr. Raymond Crawford. Pp. 80. (Oxford: Clarendon Press, 1909.) Price 5s. net.

CHARLES II. died at midday on Friday, February 6, 1685, at the age of fifty-three. His last illness seemed to his courtiers to begin on the morning of Monday, February 2, with an attack of convulsions. He was bled, and became conscious and able to speak; on Thursday had more convulsions, with intervals of consciousness, and on Friday morning, after an attack of breathlessness, gradually became insensible, and so died without further convulsion. His body was examined after death; the blood-vessels of the brain were found distended, there was an excess of serum in the cerebral ventricles, the heart was large and firm, and, except an old pleural adhesion on the left side and a general engorgement of the liver, spleen, and kidneys, there were no other signs of disease. From these facts, as set forth in detail in contemporary evidence, Dr. Crawford arrives at the conclusion "that his death was due to chronic granular kidney (a form of Bright's disease) with uræmic convulsions."

Dr. Crawford's interesting book begins with an account of the authorities. These are the memoirs of Thomas, Lord Ailesbury, who was in waiting upon the king; the despatches of Barillon, the French Ambassador; those of the Dutch Ambassador; the diary and letters of Philip, Earl of Chesterfield; a letter to Mr. Roper, a fellow of the College of St. John the Evangelist; the life of James II., based on his memoirs; the narrative of Father Hudleston, the priest who was brought in to the dying king; and the account of the illness written by Sir Charles Scarborough, the learned royal physician. Scarborough had received one of the highest honours which a physician could attain in that century, the friendship of Harvey, and his account of the progress of the illness and of each consultation, of the treatment and of the autopsy are unexceptionable evidence. Of equal value as regards truthfulness, though looking at what passed in an entirely different way, is the simple narrative of Father Richard Hudleston, a Benedictine to whom, by some slip of memory, Lord Macaulay has attributed a want of education which the narrative alone is sufficient to disprove. The accounts of Lord Ailesbury, Lord Chesterfield, and James II., and of Barillon, who were all present, supply further and, in the main, trustworthy details. The letter of the Rev. Francis Roper is less important, but shows the feeling of the time.

The king had excellent medical advice. Edmund King, who took the first step in treatment, was a man of great experience in all parts of his profession and had a scientific mind; Dr. Richard Lower was one of the first discoverers of the nature of dropsy; Dr. Frazier had been attached to the king, and attended him in poverty and exile as well as in prosperity; Dr. Walter Charleton had lived a long life among the learned; Dr. Martin Lyster had a mind attentive to every part of science, and a most tender heart; Sir

Thomas Witherby was the president of the College of Physicians. The greatest of English physicians thought so well of Dr. Thomas Short that he dedicated to him his treatise on gout and dropsy. Dr. Edmund Dickenson was a man of great general learning who had spent much time in chemical studies. Dr. Edward Browne had been trained from boyhood in literature, philosophy, and medical observation by his celebrated father, Sir Thomas Browne. Sydenham, in his account of the irregular smallpox, speaks of Millington as his friend and as a learned and candid physician, and Garth says of him—

"At your approach the baffled tyrant Death  
Breaks his keen shaft and grinds his clashing teeth."

Barwick was devoted to the royal family, and was a very competent physician. Thus the king had the good fortune to be treated by a group of learned men, among whom were several first-rate observers.

At the present day, if the fourteen most distinguished physicians of the College were at the bedside of a patient afflicted by the convulsions which often terminate diabetes, the knowledge which they could bring to bear upon the problem of treatment before them would be but little more than that which their fourteen predecessors possessed of the last illness of Charles II. Since 1685 Blackall and Bright, and many other investigators, have made clear the whole morbid anatomy, and something of the pathology and treatment, of chronic granular kidney and uræmic convulsions, and thus Dr. Crawford is able to give good reasons for his opinion of the cause of the king's death. His hypothesis explains satisfactorily the king's intervals of consciousness, and is further confirmed by the entire absence in the accounts of the eye-witnesses of any evidence of paralysis such as would almost certainly have been noticeable had cerebral hæmorrhage been the cause of death.

Dr. Crawford shows that the facial paralysis imagined by Sir Henry Hallford to be represented in the wax figure of Charles II. at Westminster is not present. He is, perhaps, not quite just to the attainments of Wellwood as shown by his "Banquet of Xenophon" and other writings, and by the general opinion of his contemporaries. He is also unintentionally unjust to one of the physicians who signed the prescriptions given in the account of Scarborough, which he has printed in full. This is Dr. Christian Harel, manager of the Royal Laboratory, whose acquaintance Charles probably made at Aix-la-Chapelle, and who was a man of great perseverance and some ability. His name is erroneously transcribed C. Farwell, E. Farrell, C. Farel, and C. Farell. He afterwards became physician to Queen Mary.

## MECHANICAL LITERATURE OF THE NINETEENTH CENTURY.

Royal Society of London. *Catalogue of Scientific Papers*, 1800-1900. Subject Index, Vol. ii., Mechanics. Pp. lxxiii+355. (Cambridge: University Press, 1909.) Price 15s. net.

THIS second volume of the Royal Society's subject index illustrates the difficulties, as well as the merits, of the undertaking. The vagueness of the

boundary between mechanics and mathematics, on the one side, and between mechanics and physics on the other, must have given some trouble, but this kind of problem seems to have been dealt with fairly satisfactorily. The difficulties of internal classification, on the other hand, are most perplexing and baffling. One constant source of difficulty is that the mere title of a paper often gives a wholly inadequate, or even a misleading, notion as to its real scope; the same paper may, moreover, contain matters which in any complete system of classification would fall under quite distinct headings. As regards papers published since 1883, the editors have attempted to deal with this point, and we are told that in all such cases the contents have been examined by experts. It is unfortunate that the same process could not be extended backwards so as to cover the whole century, but the labour involved would have been enormous, and the result at the best imperfect.

The schedules adopted as the basis of classification are those of the International Scientific Catalogue, but a number of subheadings have been introduced. These are printed in a somewhat aggressive type, and distract attention perhaps as much as they assist it; indeed, we have found that some little practice is necessary before the volume can be used with effect. It is possible to set oneself some rather interesting problems in hunting up known papers; we may suggest, for instance, a search for references to Hamilton's memoirs on varying action, Kirchhoff's theory of the vibrations of a circular plate, or his experimental method of determining elastic constants, and Hertz's paper on the pressure of elastic solids in contact. These are, of course, all in the book, but they may take some finding.

It would be ungracious to dwell further on imperfections which must occur on almost any practicable system. It is pleasant to turn to points which can be commended without reserve. The list of serials which have been used for the purposes of the work, and the indication of the more important British libraries where these are to be found, will save much trouble to scientific workers. Very welcome, also, as well as important from the point of view of scientific history, are the references to biographical articles; these seem to be especially full and complete. The lists of general treatises, tables, public addresses, and books on apparatus strike us, on the other hand, as somewhat meagre. Possibly they are merely receptacles for a few odd items for which place could not be found elsewhere.

When all is said, an index to the mechanical literature of the whole nineteenth century, drawn up on a consistent plan, cannot fail to be an enormous boon to students and investigators. These are once more under a deep obligation to the Cambridge University Press, which has undertaken the complete risk of printing and publishing the work. We would endorse the closing words of the preface, which express a hope that the scientific world generally will "use their best endeavours that this public-spirited action shall not result in financial loss."

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#### SHELL-FISH INDUSTRIES.

*Shell Fish Industries.* By Prof. J. L. Kellogg. Pp. xvi + 361. (New York: Henry Holt and Co., 1910.) Price 1.75 dollars net.

IN this work Prof. Kellogg gives a very interesting account of the shell-fish industries of the United States, and also a very valuable summary of our present knowledge of the morphology and life-histories of the edible molluscs which form the material of those fisheries. The keynote of the book is the insistence on that waste of great natural resources, and indifference to the needs of the future which have characterised American exploitation. Past generations may have believed that the natural wealth of the continent was inexhaustible, but the present one, by mercilessly clearing up what remains, has established a record of waste which is probably without parallel in the history of peoples. The picture of wastefulness and lawlessness presented by the account of the great Chesapeake oyster fishery given in this book will seem almost incredible to European readers—even to those who know how State control of the sea-fisheries has generally given origin to a mass of futile and vexatious legislation. We read of insufficient surveys resulting only in insecure titles; of conflicting laws; of the utilisation of political machinery to secure immunity from State interference; and of an entirely inefficient fishery police. The earlier oyster-dredgers are described as being commanded by "as merciless a band of pirates . . . as ever ruled a deck on the high seas," and manned by "vagrants, thieves, and murderers," or by newly arrived and ignorant foreigners. The crews of these vessels suffered "abject slavery" and "unspeakable cruelties." They formed "one of the most depraved bodies of workmen to be found in the country." The Baltimore vessels "established a record of crime and cruelty such as has rarely been equalled." The fishery was entirely the exploitation of originally very rich natural beds, and it is not surprising that depletion of these has taken place to such an extent that many areas are now barren.

The natural reaction to such a condition of affairs is scientific investigation, competent and honest surveying, and the study of methods of cultivation. This side of the question is illustrated by an account of the great oyster fisheries in Long Island Sound and adjacent waters. Here State control has suppressed disorder, and has established security of tenure in the case of the partition of the sea-bottom among the holders. Methods of cultivation—seeding, culling, deposition of cultch, and destruction of starfish and other oyster enemies—have made the sea vastly more prolific than in natural conditions; and so we find an output of enormous proportions, and steam dredging vessels without parallel elsewhere among fishing nations. The same line of development is already indicated in the case of other American shell-fisheries.

The parts of the book dealing with these matters—the history of the industry and the methods of cultivation—will prove most interesting to general readers and to those who study fishery questions, but the purely scientific chapters in Prof. Kellogg's book are